

## ABSTRACT

The invention provides a film of an yttria-alumina complex oxide having a high peel strength with respect to a substrate. A mixed powder of powdery materials of yttria and alumina is sprayed on a substrate to form a sprayed film made of an yttria-alumina complex oxide. Preferably, the powdery material of yttria has a 50 percent mean particle diameter of not smaller than 0.1  $\mu\text{m}$  and not larger than 100  $\mu\text{m}$ , and the powdery material of alumina has a 50 percent mean particle diameter of not smaller than 0.1  $\mu\text{m}$  and not larger than 100  $\mu\text{m}$ . Preferably, the yttria-alumina complex oxide contains at least a garnet phase, and may further contain a perovskite phase.